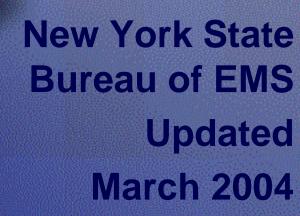
CFR/EMT/AEMT
BLS
Adult Major
Trauma
Protocol





How to use this presentation

This presentation was developed to assist you in understanding the major changes and differences in the 2004 BLS Adult Major Trauma protocol versus the previous version.

We recommend that you have a NYS BEMS Certified Instructor assist your agency in completing your in-service and implementing this new protocol.

As you review this presentation you will need to have a copy of the protocol with you. The presentation refers back to specific content within the protocol.



Regional Protocols

Regional EMS Councils may develop regional protocols. Regional protocols may differ from NYS State-Wide protocols, to serve the need of local and regional systems.

If your Regional protocol differs from NYS protocol, your Regionally approved protocol will supercede the NYS protocol for patient treatment within that region only.





- Regional Protocols are not used on NYS Written Certification Exams
- The NYS State-Wide Protocols are used in the production of the NYS Written Certification Exams.
- Therefore, NYS providers are held responsible for the protocol's content for the NYS Written Exams.





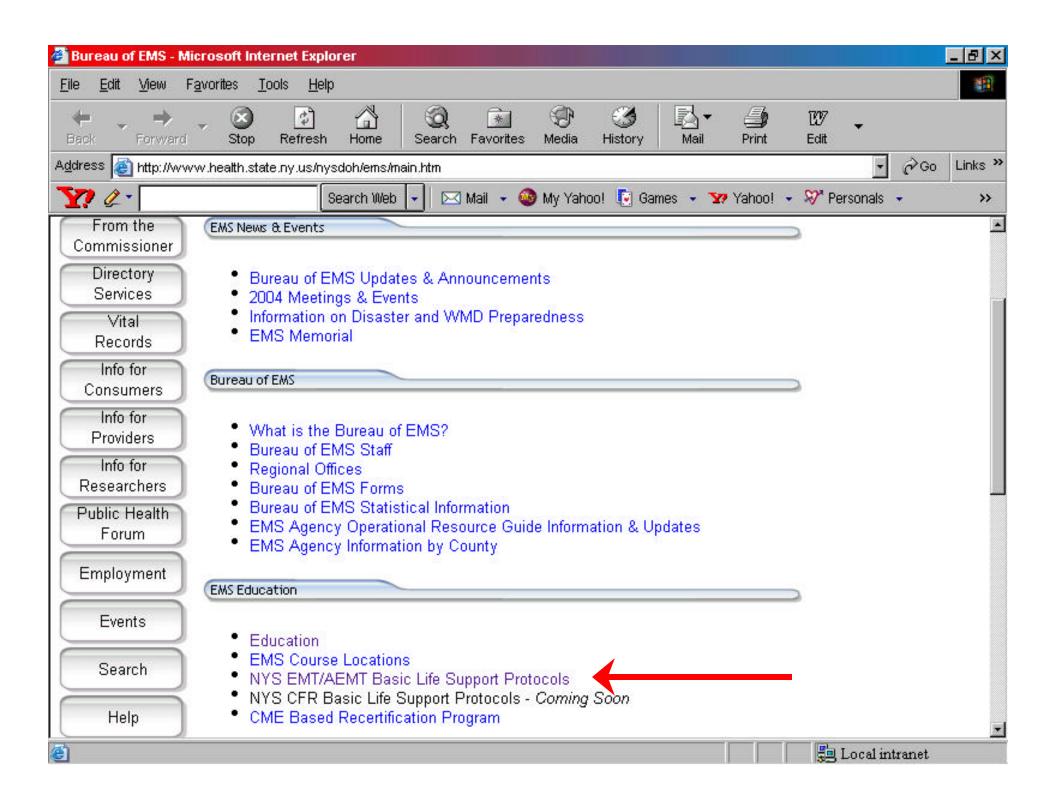
- Developed by the NYS EMS Bureau in conjunction with the NYS Emergency Medical Services Council (SEMSCO) and the NYS Trauma Advisory Committee
- Reviewed and approved by SEMSCO and the NYS Emergency Medical Advisory Committee (SEMAC)





- 3 hole punched, loose leaf book
- Easily updateable
- Updates available on our web page http://www.health.state.ny.us/nysdoh/ems/main.htm
- Updates already on the web site
- Check often for updates!!





Protocol Distribution

 Several copies will be mailed to each NYS Certified EMS Agency. The protocol may be reproduced and must be supplied to all NYS Certified EMS members. It is the responsibility of the agency to provide this update to its members.



Protocol Distribution

 Course Sponsors will receive the protocol in a mailing. Course Sponsors must assure that all students in their courses receive a copy of the new protocol. The new protocol must be used in all courses effective now.





- Remove the previous version of the Adult Trauma Protocol on T - 6 page
- Insert the new version of the Adult Trauma Protocol, which will replace T - 6 page 1





- The new protocol is in effect now.
- Course sponsors must use the new protocol in all current and future courses.
- Agencies must conduct an in-service training session and provide their members copies of the new protocol within 45 days of receiving the new protocol.





- Developed through the use of several NYS & national resources
- Physicians & members of SEMAC & SEMSCO in conjunction with
 - NYS Statewide Trauma Advisory Committee
 - SUNY School of Public Health
 - American Academy of Surgeons
 - National Highway, Transportation
 & Safety
 Administration

 Adult Major Trau





Data used from National and NYS resources

- Statewide Trauma Advisory Committee and SUNY School of Public Health
 - NYS Trauma data from as far back as 1994
 - Hospital admission and discharge data
 - Trauma Center data collection
- PCR data
- American Academy of Surgeons criteria and data used



Protocol Contents

Sets criteria to determine if an adult patient must be treated according to the Adult Major Trauma Protocol.

- Note box
- Patient's Physical Findings
- Mechanism of Injury
- High Risk Patients NEW





- The updated protocol concentrates on the criteria used to determine if a patient should be treated under the Adult Major Trauma protocol
- Only the first page of the protocol has been updated (criteria used for determining if a patient should be treated under the Adult Major Trauma protocol)





- Previous protocol listed Mechanism of Injury (MOI) before Patient's Physical Findings
- New protocol lists Patient's Physical Findings before MOI to place more emphasis on the patient
- Slightly less emphasis on MOI, but it still is important to determine MOI





- CFRs are the first certified level of care that may arrive on the scene before an ambulance.
- The CFR can play an intricate role in deciding if a patient may require transportation to a Trauma Center and if air medical transport may be needed.





- This protocol has not been modified for the CFR.
- The CFR should perform up to their level of approved training when using this and all appropriate protocols.





The Changes

What's New and Not So New





- No changes were made to this section
- Request for ALS and/or Air Medical Transportation should be done at time of dispatch or as soon as possible
- Transportation of the patient can not be delayed to await ALS or Air
 Medical Transportation







Patient's



Physical Findings





NEW YORK STATE

LEMERGENCY MEDICAL SERVICES

EDUCATIONAL SERVICES

Adult Major Trauma Protocol



- Due to safer and better designed motor vehicles, Mechanism of Injury (MOI) is playing less of a role in patient outcome
- Patient's physical findings are more accurate in determining whether or not the patient needs to be treated at a Trauma Center and/or according to the Adult Major Trauma protocol





- Placed above MOI criteria within the protocol to place more emphasis on the patient's physical findings
- 11 criteria to determine patient's status







- Old Protocol: GCS less than 14
- New Protocol: GCS less than or equal to 13
- Reflects no major change other than wording.
 This hopes to reduce any confusion that may occur over the exact GCS number.
- Although CFRs are not formally trained in the use of GCS specifically, they do have the knowledge to determine all of the GCS criteria.
- Through the use of this presentation and additional training, CFRs can determine a patient's GCS.



Glasgow Coma Scale

Example	Score
Opens eyes on own	4
Opens eyes when asked to by examiner	3
Opens eyes when pinched	2
Does not open eyes to voice or pain	1
	Opens eyes on own Opens eyes when asked to by examiner Opens eyes when pinched

Glasgow Coma Scale

Verbal Response	Example	Score
Orientated	Carries on a conversation and is able to accurately state time, date and place	5
Confused	Not accurate to time, date and place	4
Inappropriate Words	Talks so examiner can understand him, but makes no sense and not accurate	3
Incomprehensible Sounds	Makes sounds that the examiner cannot understand or comprehend	2
No Response	Makes no noise or no response to examiners voice commands	1

Glasgow Coma Scale

Motor Responses	Example	Score
Obeys Commands	Follows simple commands	6
Localizes Pain	Pulls examiner's hand away when pinched	5
Withdraws from Pain	Pulls hand away when pinched	4
Abnormal Flexion	Flexes body inappropriately to pain	3
Abnormal Extension	Body becomes rigid in an extended position when examiner pinches patient	2
No Response	No motor response to pinch	1



 Pulse rate is less than 50 or more than 120 beats per minute:

NO CHANGES.







- Old Protocol: less than 10/min or greater than 28/min
- New Protocol: less than 10/min or more than 29 breaths per minute
- Reflects patient outcome data from the Trauma Registry database reveling that this group of patients has a higher risk of dying.





- Systolic Blood Pressure:
 - Old Protocol: Systolic blood pressure of 90 mm Hg or less
 - New Protocol: Systolic blood pressure less than 90 mm Hg
 - Minor change reflecting patient outcome data from several sources.
 - CFRs, if agency and regionally approved, may use the systolic blood pressure criteria for this protocol.





Penetrating Injuries:

- Old Protocol: Penetrating injuries of the trunk, head, neck, chest, abdomen or groin
- New Protocol: Penetrating injuries to head, neck, torso or proximal extremities
- Proximal extremities added due to concerns over patient outcome if the patient is not transported to a Trauma Center or treated under the Adult Major Trauma protocol.





Long Bone Fractures:

- Old Protocol: Two or more proximal long bone fractures
- New Protocol: Two or more suspected proximal long bone fractures
- Suspected added to protocol to follow current curricula content and for those patients with no "obvious" fractures, but where a fracture is suspected.





Flail Chest:

- Old Protocol: Flail chest
- New Protocol: Suspected flail chest
- A flailed chest may be difficult to diagnose in the field setting. Suspected was added for those patients that do not have an "obvious" flailed chest, but where a flailed chest may be suspected due to MOI or patient's physical findings.
- CFRs are not trained to recognize a flail chest. This assessment & recognition should be determined by an EMT or AEMT.





Burns:

- Old Protocol: Burns that involve 15% or more of the body surface <u>or</u> facial/airway burns
- New Protocol: Burns not contained within this protocol. Burns are addressed under a separate burn protocol.
- Some Trauma Centers do not have the ability to treat burn patients. Therefore, patient's with isolated burns with no other trauma should fall under the burn protocol.



Patient's Physical Findings

 Combined system trauma that involves two or more body systems:

Removed from new protocol.







- Old Protocol: Spinal cord injury or limb paralysis
- New Protocol: Suspected spinal cord injury or limb paralysis
- The word "suspected" added due to the difficulty in diagnosing this type of injury in the field.
- Major revisions to the Head and Spine Injury protocol are forthcoming.





- Amputations:
 - NO CHANGES.





- Suspected Pelvic Fractures:
 - Old Protocol: N/A
 - New Protocol: Suspected pelvic fractures.
 - Reflects patient outcome data from the Trauma Registry database.





- Open or depressed skull fracture:
 - Old Protocol: N/A
 - New Protocol: Open or depressed skull fracture.
 - Found in national ACS protocols. NYS data shows that these patients meet the Major Trauma criteria.







Injury



Adult Major Trauma Protocol

Mechanism of Injury

Ejection or partial ejection from an automobile

Definitions:

- Rollover any vehicle rotation of 90 degrees or more about any true longitudinal or lateral axis.
- Ejection refers to occupants being totally or partially thrown from the vehicle as a result of a collision.





- Death in the same passenger compartment
 - NO CHANGES





- Extrication time in excess of 20 minutes
 - Old Protocol: N/A
 - New Protocol: Extrication time in excess of 20 minutes.
 - Patient's who have delayed extrication times have a higher rate of mortality.





Vehicle collision and intrusion

- Old Protocol: vehicle collision >20 MPH resulting in 12 inches of deformity to the vehicle
- New Protocol: vehicle collision resulting in 12 inches of intrusion into the passenger compartment
- Reference to vehicle speed separated out in to it's own criteria (see MOI criteria #8).





Motorcycle crashes

- Old Protocol: Motorcycle crash.
- New Protocol: Motorcycle crash >20 MPH <u>or</u> with separation of rider from motorcycle.
- National statistics have shown that lower speed motorcycle crashes, less than 20 MPH, result in either no injuries or injuries that usually do not warrant transportation to a Trauma Center.





- Falls greater than 20 feet
 - NO CHANGES







- Old protocol: Vehicle rollover
- New protocol: Vehicle rollover (90 degree vehicle rotation or more) unrestrained passenger
- Due to today's improved vehicle construction and safety devices, many "restrained" crash victims who are involved in rollover accidents, sustain less or minimal injury than they did in the past.







- Old protocol: Vehicle-pedestrian collision
- New protocol: Vehicle vs. pedestrian or bicycle collision above 5 mph.
- This removes the standalone criteria from the old protocol that stated: vehicle vs. bicycle collision >5 mph







Thrombolytics





Patients

ilemodinijis

Von Willebrand's Disease



Adult Major Trauma Protocol



- Not included in old protocol
- Patient's <u>not meeting</u> Major Trauma criteria under Patient's Physical Findings or Mechanism of Injury
- Patients who are injured
- Patients of certain age groups
- Patients with certain pre-existing medical conditions



High Risk Patients

 If a patient does not meet the criteria under Patient's Physical Findings or Mechanism of Injury for Major Trauma, but has sustained an injury and has one or more of the following criteria, they are considered a "High Risk Patient". Consider transportation to a Trauma Center. Consider contacting medical control.



High Risk Patients

Data has shown that these patients are at a higher risk of death, after suffering a traumatic injury, due to their age and/or their pre-existing medical condition.





- Bleeding disorders or patients who are on anticoagulant medications
- Cardiac disease and/or respiratory disease
- Insulin dependent diabetes, cirrhosis, or morbid obesity
- Immunosuppressed patients (HIV disease, transplant patients and patients on chemotherapy treatment

Age >55





- Bleeding disorders or patients who are on anticoagulant medications
- Specific bleeding disorders, which the prehospital care provider should be familiar with are described on the next set of slides





Anemia

- Reduction of and below normal levels of hemoglobin or erythrocytes. Anemia is not a disease, but rather a symptom of an underlying disease process.
- Precipitating causes:
 - blood loss (acute or chronic)
 - decreased production of erythrocytes
 - increased destruction of erythrocytes





- Anemia
 - Signs & Symptoms:
 - Fatigue
 - Lethargy
 - Fever
 - Cutaneous (skin) bleeding
 - Bleeding from mucous membranes





Disseminated Intravascular Coagulopathy (DIC)

- A complication of severe injury, trauma or disease. Relatively common abnormal clotting disorder, most often seen in the hospital setting.
- Signs and Symptoms:
 - Dyspnea
 - Bleeding
 - Signs & Symptoms associated with hypotension and hypoperfusion





Hemophilia

- A hereditary disorder transmitted by the female to the male. These patients have a severe deficiency in blood clotting.
- Bleeding can occur spontaneously, after minor injury, or during a medical procedure, such as intravenous insertion.
- Bleeding can occur anywhere in the body, but bleeding into joints, deep muscles, urinary tract, and intracranial sites are the most common.





- Hemophilia
 - Common assessment findings:
 - Labored breathing
 - Weak and thready peripheral pulses
 - Tachycardia
 - Skin may be cool, clammy, pallor
 - These patients should be transported for evaluation and possible reperfusion





- Common hemophilia medications:
 - factor VIII (Factorate)
 - factor IX (Konyne)
 - anti-inhibitor coagulant complex (Autoplex)





- Anticoagulant medications
 - These medications are designed to prevent or delay coagulation (clotting) of blood.
 - Types of patients or conditions that may take anticoagulant medications:
 - Stroke
 - Myocardial Infaction
 - Valvular heart disease or replacement
 - History of pulmonary embolisms
 - Deep vein thrombosis







- aspirin
- dipyridamole (Persantine)
- clopidrogrel (Plavix)
- ticlopidine (Ticlid)
- abciximab (ReoPro)
- warfarin (Coumadin)

- heparin (Liquaemin)
- Streptokinase (Streptase)
- tisue plasminogen activator (t-PA, Activase)
- retivase (Retavase)





- New protocol was developed to follow patient outcome data from NYS and the nation.
- More emphasis on Patient's Physical Findings.
- MOI is still important.
- Consider transport of "High Risk Patients" to a Trauma Center.

